AMENDMENTS TO THE CLAIMS:

Please cancel claims 2, 3, 8 and 24, amended claims 1, 4-7, 9-11, 13, 15, 17-23 and 25, and add new claims 30-51 as follows:

1. (Currently Amended) An electronic circuit configured to be ~~electronically connectable~~ electrically coupled to an electrochemical cell for receiving a biological sample and having a capacitance created by said biological sample ~~when~~ upon application of a voltage ~~is applied~~ to said electrochemical cell, said circuit comprising:

an oscillation circuit configured to receive a voltage input signal resulting from the charging and discharging of the electrochemical cell and ~~configured to convert~~ comprising a Schmidt trigger circuit for converting said voltage input signal to an oscillating voltage output signal proportional to the capacitance of the cell.

2. (Cancelled)

3. (Cancelled)

4. (Currently Amended) The electronic circuit of claim ~~3 wherein said microprocessor comprises~~ 1 further comprising means for deriving the value of the volume of said sample based on the cell capacitance.

5. (Currently Amended) The electronic circuit of claim 4 ~~wherein said microprocessor comprises~~ further comprising means for determining the adequacy of said volume for measurement of one or more analytes within the sample based on said oscillating voltage signal.

6. (Currently Amended) The electronic circuit of claim 5 ~~wherein said microprocessor comprises~~ further comprising means for compensating for ~~an inadequate volume of sample in order to proceed with the~~ said one or more analyte measurements when said volume is determined to be inadequate.

7. (Currently Amended) The electronic circuit of claim 1 further comprising ~~a supply voltage in the range from about 1.8 to 5.0 V, and wherein said oscillation circuit comprises an operational amplifier having an upper voltage in the range from about 200 to 600 mV and an lower voltage in the range from about 0 to 500 mV~~ a resistor electrically coupled to said Schmidt trigger circuit.

8. (Cancelled)

9. (Currently Amended) A system comprising:

a meter for receiving an electrochemical cell configured for receiving a biological sample and having a capacitance created by said biological sample when a voltage is applied to said electrochemical cell;

a DC voltage supply configured to be electrically connectable to said electrochemical cell for charging the electrochemical cell, wherein ~~in a~~ said cell capacitance is created; and

an electronic circuit integrally configured with said meter and configured to be electronically connectable to said electrochemical cell, said circuit comprising an oscillator circuit configured to receive a voltage input signal resulting from the charging and discharging of ~~the~~ said electrochemical cell and configured to convert the voltage input signal to an oscillating voltage output signal, wherein the oscillation period of said oscillating voltage output signal is proportional to ~~the~~ said cell capacitance.

10. (Currently Amended) The system of claim 9 wherein said electronic circuit further comprises a microprocessor electrically connected to said ~~oscillation~~ oscillator circuit and configured to determine the volume of the biological sample.

11. (Currently Amended) A system for determining the volume of a biological sample within an electrochemical cell having a surface area and a volume, comprising:

a voltage supply configured for applying a first voltage to said electrochemical cell;

means for measuring a second voltage generated by said cell when said first voltage is applied to said cell;

means for converting said second voltage into an oscillating voltage;

means for deriving the capacitance of said cell from said oscillating voltage;

~~means for deriving the surface area of said cell covered by said biological sample from said cell capacitance;~~ and

means for deriving the volume of said biological sample from said ~~surface area~~ cell capacitance.

12. (Original) The system of claim 11 further comprising means for determining whether said sample volume is adequate for making an accurate measurement of the concentration of one or more selected analytes within said biological sample.

13. (Currently Amended) The system of claim 12 further comprising:

means for measuring the concentration of one or more selected analytes within said biological sample; and

means for compensating for said one or more selected analyte concentration measurements when said sample volume is determined to be inadequate ~~while measuring the concentration of one or more selected analytes within said biological sample~~.

14. (Original) The system of claim 13 further comprising means for displaying the measured concentration of one or more selected analytes within said biological sample.

15. (Currently Amended) A method for determining the volume of a biological sample applied to an electrochemical biosensor, comprising:

applying a direct current voltage to the biosensor thereby charging the biosensor, wherein a capacitance is created within the biosensor and a voltage is generated by charging the biosensor;

converting the voltage to an oscillating voltage having a period proportional to the capacitance;

determining the capacitance of the biosensor;

~~determining the surface area of the portion of the biosensor in contact with the biological sample based on said determined capacitance;~~ and

determining the volume of the sample from said ~~determined surface area~~ capacitance.

16. (Original) The method of claim 15 further comprising determining whether said sample volume is adequate for measuring one or more selected characteristics of said sample.

17. (Currently Amended) The method of claim 16 further comprising:

determining the necessary compensation factor to compensate for said one or more selected characteristic measurements when ~~the inadequate volume based on a determination that~~ said sample volume is determined to be inadequate;

measuring at least one characteristic of said sample; and

compensating for the inadequate sample volume~~; and~~

~~measuring at least one characteristic of said sample;~~.

18. (Currently Amended) The method of claim 17 wherein the at least one characteristic of said sample is the concentration of one or more analytes present within said sample.

19. (Currently Amended) The method of claim ~~18~~ 17 wherein said determining the necessary compensation factor comprises determining the ratio of the capacitance of the biosensor when completely filled with said sample to the capacitance of the biosensor filled with said inadequate sample volume.

20. (Currently Amended) The method of claim 15 ~~further comprising~~ said determining said volume comprises determining ~~said~~ the surface area of the portion of said biosensor in contact with said biological sample based on said determined capacitance.

21. (Currently Amended) The method of claim ~~15~~ 20 wherein said electrochemical biosensor comprises at least two electrodes forming an electrochemical cell having a cell volume and wherein said determined surface area is a surface area of said at least two electrodes covered by said biological sample.

22. (Currently Amended) The method of claim 15 wherein an average of said ~~average~~ direct current voltage is in the range from about 0 to 600 mV.

23. (Currently Amended) A method for determining the volume of a biological sample applied to an electrochemical ~~biosensor~~ cell; comprising:

providing the system of claim 9;

applying a DC voltage to said ~~biosensor~~ cell thereby charging ~~the biosensor~~ said cell, wherein a capacitance is created within ~~the biosensor~~ said cell, and generating a charged voltage as a result the capacitance; and

converting the charged voltage to an oscillating voltage having a frequency proportional to the capacitance.

24. (Cancelled)

25. (Currently Amended) A kit for determining the volume of a biological sample deposited ~~into~~ onto an electrochemical test strip comprising an electrochemical cell, said kit comprising at least one electronic circuit according to claim 1.

26. (Original) The kit of claim 25 further comprising an automated device within which said electronic circuit is integrally configured.

27. (Original) The kit of claim 26 further comprising instructions for using said electronic circuit and said automated device.

28. (Original) A kit for determining the volume of a biological sample within an electrochemical cell, comprising:

a system according to claim 9; and

instructions for using said system.

29. (Original) The kit of claim 28 further including an automated device integral with said system configured to operatively receive and engage said electrochemical cell for determining one or more physical or chemical characteristics of the biological sample.

30. (New) The electronic circuit of claim 1 further comprising a current supply electrically coupled to said Schmidt trigger circuit.

31. (New) The electronic circuit of claim 1 wherein said capacitance is the equivalent capacitance of the cell.

32. (New) The electronic circuit of claim 1 wherein the oscillation period of the oscillating voltage signal is directly proportional to the cell capacitance.

33. (New) The electronic circuit of claim 1 wherein the oscillation frequency of the oscillating voltage signal is inversely proportional to the cell capacitance.

34. (New) The system of claim 11 wherein said means for deriving said volume comprises means for deriving the surface area of said cell covered by said biological sample from said cell capacitance and further comprises means for deriving said volume from said surface area.

35. (New) The method of claim 16 wherein said volume determination comprises determining from said capacitance the surface area of the portion of said biosensor in contact with said biological sample and further comprising determining said volume from said surface area.

36. (New) An electronic circuit configured to be electrically coupled to an electrochemical cell configured for receiving a biological sample, said circuit comprising:

means for applying a DC voltage to said electrochemical cell wherein, upon application of said DC voltage, said electrochemical cell generates a capacitance;

means for receiving a signal produced by said electrochemical cell; and

means for converting said signal to an oscillating signal proportional to the capacitance of the cell.

37. (New) The electronic circuit of claim 36 wherein said signal conversion means comprises a Schmidt trigger circuit.

38. (New) The electronic circuit of claim 36 further comprising means for deriving the value of the volume of said sample based on the cell capacitance.

39. (New) The electronic circuit of claim 38 further comprising means for determining the adequacy of said volume for measurement of one or more analytes within the sample based on said oscillating signal.

40. (New) The electronic circuit of claim 39 further comprising means for compensating for said one or more analyte measurements when said volume is determined to be inadequate.

41. (New) The electronic circuit of claim 36 wherein the oscillation period of said oscillating signal is proportional to the cell capacitance.

42. (New) The electronic circuit of claim 36 wherein the oscillation frequency of said oscillating signal is inversely proportional to the cell capacitance.

43. (New) An electronic circuit configured to be electrically coupled to an electrochemical cell for receiving a biological sample and having a capacitance created by said biological sample upon application of a voltage to said electrochemical cell, said circuit comprising:

an oscillation circuit configured to receive a voltage input signal resulting from the charging and discharging of the electrochemical cell and comprising a comparator circuit for converting said voltage input signal to an oscillating voltage output signal proportional to the capacitance of the cell.

44. (New) The electronic circuit of claim 43 further comprising means for deriving the value of the volume of said sample based on the cell capacitance.

45. (New) The electronic circuit of claim 44 further comprising means for determining the adequacy of said volume for measurement of one or more analytes within the sample based on said oscillating voltage signal.

46. (New) The electronic circuit of claim 45 further comprising means for compensating for said one or more analyte measurements when said volume is determined to be inadequate.

47. (New) The electronic circuit of claim 43 further comprising a resistor electrically coupled to said comparator circuit.

48. (New) The electronic circuit of claim 43 further comprising a current supply electrically coupled to said comparator circuit.

49. (New) The electronic circuit of claim 43 wherein said capacitance is the equivalent capacitance of the cell.

50. (New) The electronic circuit of claim 43 wherein the oscillation period of the oscillating voltage signal is directly proportional to the cell capacitance.

51. (New) The electronic circuit of claim 43 wherein the oscillation frequency of the oscillating voltage signal is inversely proportional to the cell capacitance.

AMENDMENTS TO THE DRAWINGS:

Please replace the drawing page containing Figs. 3 and 4 with the Replacement Sheet provided with this Amendment. The captions "μP" and "DISPLAY" have been added to components 52 and 80 respectively.